

## **Patent Abstracts of Japan**

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APPLICANT: MATSUSHITA ELECTRIC IND CO LTD;

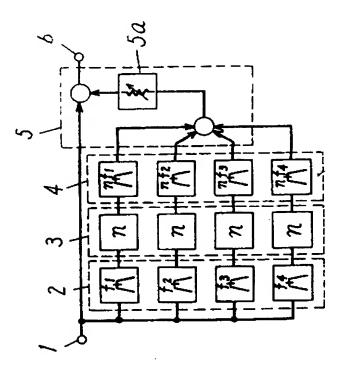
INVENTOR: SANO SHINYA;

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TITLE

HARMONIC SYNTHESIZING CIRCUIT



ABSTRACT: PURPOSE: To attain sound with bright tone color, by extracting a middle and a high frequency component included in the source, forming harmonics based on the component and adding the harmonics to the original source, for increasing the harmonics without increasing noise.

> CONSTITUTION: A prescribed frequency component is extracted at a band pass filter 2. Components of frequency difference, double frequency and frequency sum are formed by passing the prescribed frequency component through a nonlinear circuit 3. The frequency component produced by cross modulation, and especially sensitive to ears is cut off when it passes through a band pass filter 4. These frequency components are added to an input signal at an adder 5 and an output changed for the tone color is obtained at an output terminal 6.

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